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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,135	04/21/2006	Teuvo Moilanen	44655-324916	1173

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EXAMINER

REESE, ROBERT T

ART UNIT

PAPER NUMBER

3654

NOTIFICATION DATE

DELIVERY MODE

08/18/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/563,135

Applicant(s)

MOILANEN, TEUVO

Examiner

ROBERT T. REESE

Art Unit

3654

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/CD)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

The amendment filed June 2, 2010, has been entered. Claim 1 has been amended. Therefore, claims 1-9 are currently pending in the application.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 2, 4, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hakansson (6,928,976) in view of Reininger (2003/0030431).

As per claim 1, Hakansson discloses: An arrangement (abstract) in connection with a central lubrication system, the arrangement comprising a lubricant vessel (1), a pump unit (3-Column 5, lines 58-67), a control unit (column 4, lines 57-63) , pipe systems (2), a pressure monitor unit (13), at least one feeder (5), the lubricant being arranged to be pumped from the lubricant vessel along the pipe to the feeders and objects to be lubricated (depicted in figure 1).

However, Hakansson does not disclose: The feeder is provided with at least one magnetizable piston which moves due to the influence of the pressure of a lubricant present in the pipe system to be lubricated, and a movement monitor unit for each feeder configured to monitor the operation of the central lubrication system, and a junction part located in the movement monitor unit outside a pressurized space, wherein the junction part comprises a sensor part which comprises a fixed permanent magnet to generate a magnetic field, and a sensor for detecting movement of the magnetizable piston and an electronics part which processes a signal received from the sensor and

produced as a result of a change in the magnetic field caused by the movement of the piston with respect to the sensor part and forwards this processed signal to the control unit.

Reininger discloses a position detection system with a piston (11) which moves due to the influence of the pressure of a lubricant present in the pipe system to be lubricated, a movement monitor unit (14) for each feeder in order to monitor the operation of the system, wherein the movement monitor unit is located outside a pressurized space of the feeder (the pressurized space of the feeder is taken to be the interior of the pipe wall 10, and the bottom surface of the piston 11.), and wherein the junction part comprises a sensor part (15 and 16) which, comprises a fixed permanent magnet (13) to generate a magnetic field (Since the fixed magnet (13) is positioned above the bottom surface of piston 11, it is taken to be outside of the pressurized space.), and a sensor (15 and 16) for detecting movement of the magnetizable piston (11-It is construed that the piston, element 11, with an integral magnetic component, element 13, would become magnetized by contact with the permanent magnet.) and an electronics part (17) which processes a signal received from the sensor and produced as a result of a change in the magnetic field caused by the movement of the piston with respect to the sensor part and forwards this processed signal to the control unit.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify lubrication apparatus of Hakansson with the piston and movement monitoring unit of Reininger to provide a more exact measure of the amount of lubricant being provided to the lubrication target.

The combination of Hakansson and Reininger discloses the claimed invention except for the junction part is manufactured from a weakly magnetable material. It would have been obvious to one having ordinary skill in the art at the time of the invention to manufacture the junction part from a weakly magnetable material to minimize potential magnetic interference with the Hall effect sensor., since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Additionally, the combination of Hakansson and Reininger discloses the claimed invention except for the piston being made of a magnetizable material. It would have been obvious to one having ordinary skill in the art at the time of the invention to manufacture the piston from a magnetizable material to amplify the magnetic signal of the fixed magnet on the Hall effect sensor, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

As per claim 2, Reininger teaches that the sensor (15) is a Hall Effect sensor (Paragraph 14).

As per claim 4, Reininger teaches that output of the movement unit is locking so that a detection mode of the piston remains in memory (paragraph 21).

As per claim 5, Reininger teaches that the locked detection mode of the output of the movement monitor unit is releasable by cutting an operating voltage of the sensor

for a predetermined time (It is deemed that this type of reset is a well know feature with electronic equipment.)

As per claim 6, Reininger teaches that the movement monitoring unit is entirely located outside a pressurized space of the feeder (Depicted in figure 1).

3. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hakansson (6,928,976) and Reininger (2003/0030431) in view of Hall Effect Sensing and Application by Honeywell.

As per claims 3 and 7, the combination of Hakansson and Reininger disclose all of the structural limits of claim 1 above.

However, the combination of Hakansson and Reininger does not disclose: that the sensor is an analogue Hall sensor (claim 3) and that the electronics part comprises a voltage regulator, a detector- for detecting polarity of voltage, a microcontroller, an output circuit, indicator LED's as well as an amplifier part comprising a differential amplifier circuit and low-pass filters (Claim 7).

Hall Effect Sensing and Application by Honeywell discloses: a sensor is an analogue Hall sensor (page 5) (claim 3) and that the electronics part comprises a voltage regulator (page 4), a detector (the Comparator, Figure 4-26) for detecting polarity of voltage, a microcontroller (page 67), an output circuit (depicted in figure 4-26), indicator LED's (page 51) as well as an amplifier part comprising a differential amplifier circuit (page 4) and low-pass filters (page 57) (Claim 7).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify lubrication apparatus of the combination of

Hakansson and Reiningger with the analogue Hall sensor and electronics as discussed by the Hall Effect Sensing and Application by Honeywell to provide an proper creation, detection, and processing of the signal to determine the position of the piston.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over combination of Hakansson (6,928,976), Reiningger (2003/0030431) and Hall Effect Sensing and Application by Honeywell, in further view of Diong (2002/0165953).

As per claim 8, the combination of Hakansson, Reiningger and Hall Effect Sensing and Application by Honeywell disclose all of the structural limits of claim 7 above.

However, the combination of Hakansson, Reiningger and Hall Effect Sensing and Application by Honeywell does not disclose: the output circuit is a potential-free relay contact.

Doing discloses a network architecture for internet appliances which contains an output circuit which is a potential-free relay contact (312, Paragraph 45).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the lubrication apparatus of the combination of Hakansson, Reiningger and Hall Effect Sensing and Application by Honeywell with the potential-free relay contact of Doing to provide a serial communications port for the output of the sensor.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hakansson (6,928,976), Reiningger (2003/0030431), Hall Effect Sensing and Application by Honeywell, and Diong (2002/0165953), in the further view of Melgaard et al. (3,872,473).

As per claim 9, the combination of Hakansson, Reininger, Hall Effect Sensing and Application by Honeywell and Doing disclose all of the structural limits of claim 7 above.

However, the combination of Hakansson, Reininger, Hall Effect Sensing and Application by Honeywell, and Doing does not disclose: the plurality of movement monitor units of the central lubrication system are coupled in series.

Melgaard et al. discloses a monitoring apparatus with a plurality of sensors of the central lubrication system are coupled in series (abstract and figure 1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the lubrication apparatus of the combination of Hakansson, Reininger, Hall Effect Sensing and Application by Honeywell, and Doing with the serial connections of Melgaard et al. simplify the design of the apparatus by reducing the amount of wiring involved for the connections of the sensors to the central controller.

Response to Arguments

6. Applicant's arguments filed June 2, 2010, have been fully considered but they are not persuasive. The Applicant has raised two issues. The first is the matter of the placement of the permanent magnet outside the pressurized space. As discussed in the rejection of claim 1, the pressurized space of the feeder in the Reininger reference is taken to be the interior of the pipe wall 10, and the bottom surface of the piston 11. Since the fixed magnet 13 is positioned above the bottom surface of piston 11 (as depicted in figure 1), it is taken to be outside of the pressurized space. The second

issue is the magnetizable piston. As discussed in the rejection of claim 1 above, It is taken that the piston, element 11 in the Reininger reference, with an integral magnetic component, element 13, would become magnetized by contact with the permanent magnet. The choice of a magnetizable material for the magnet is deemed to be an obvious choice of materials, as a way to amplify the magnetic signal of the fixed magnet on the Hall effect sensor.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **ROBERT T. REESE** whose telephone number is (571) 270-5794. The examiner can normally be reached on **M_F 7:30-5**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael R. Mansen can be reached on (571) 272-6608. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael R Mansen/
Supervisory Patent Examiner, Art
Unit 3654

RTR